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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,677	03/30/2001	Kurt James Korkowski	STL9563	6119

7590 04/23/2003

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EXAMINER

DAVIS, DAVID DONALD

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 04/23/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/823,677

Applicant(s)

KORKOWSKI ET AL.

Examiner

David D. Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. Receipt is acknowledged of the Information Disclosure Statement (IDS) received March 30, 2001.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Schirle et al (US 5,956,203). As per claims 1 and 5, Schirle et al shows in figures 1 and 2 a method of reducing a flow-induced disturbance on actuator arm 18 of a disc drive 10, includes steps of: (a) receiving a gas flow generated by a rotation of first disc 14 of the disc drive 10; and (b) guiding the received flow along a surface 24 mechanically isolated from the actuator arm 18 so as to cause the flow to include a substantial inward radial component and to be more closely aligned along a leading edge of the actuator arm 18.

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As per claims 2 and 15, Schirle et al further shows in figures 1 and 2 a second disc 14 configured for co-rotation with the first disc 14, and in which the guiding step (b) is performed without extending the surface between the first and second discs. As per claim 3, Schirle et al further discloses a step (c) of redirecting the guided flow with the leading edge of the actuator arm before the guided flow travels $1/4$ of a revolution of the disc.

As per claims 4, 6, 11 and 14, Schirle shows in figures 1 and 2 disc 14 having a nominal radius R , in which the surface 24 has a horizontal cross-section with a minimum macroscopic radius of curvature greater than $R/100$ so that the guiding step (b) is performed with a minimal drag-induced energy loss. As per claim 7, Schirle et al shows in figures 1 and 2 that disc drive 10 further includes a second disc 14 configured for co-rotation with the first disc 14, and in which a channel has a vertically uniform cross section so that the radial component of the guided flow will be larger between the discs than above the discs.

As per claim 8, with respect to claim 5, Schirle shows in figures 1 and 2 a guiding step (b) includes a step (b1) of expelling at least part of the guided flow toward an inner diameter of the disc. As per claim 9, with respect to claim 8, Schirle shows the guiding step (b) further includes steps of: (b2) combining the expelled flow with a tangent flow traveling along an edge of the disc 14 so that the combined flow has a net flow direction with an inward radial component; (b3) redirecting the combined flow again with the leading edge of the actuator arm before the combined flow travels $1/4$ of a revolution of the disc so that the flow-induced disturbance on the actuator arm 18 is reduced by the inward radial component of the net flow direction. As per claim 10, with respect to claim 5, in which the flow of the receiving step (a) has a flow speed and in which the guiding step (b) includes a step (b1) of maintaining the flow speed

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within 50 % while the received flow remains within the channel. As per claim 12, Schirle et al shows in figures 1 and 2, a method of reducing a flow-induced disturbance on an actuator arm 18 of a disc drive 10, includes steps of: (a) receiving a gas flow generated by a rotation of a first disc 14 of the disc drive 10, the flow having an initial turbulence level corresponding to an initial Reynolds number T ; (b) guiding the received flow along a surface 24 mechanically isolated from the actuator arm 18 so as to make the flow more turbulent and to cause the flow to include a substantial inward radial component so as to be more closely aligned along a leading edge of the actuator arm 18; and (c) while a majority of the guided flow has a larger Reynolds number $> 1.05T$, redirecting the guided flow with the leading edge of the actuator arm 18. As per claim 13, with respect to claim 12, Schirle further shows in figures 1 and 2 a step (c) of redirecting the guided flow with the leading edge of the actuator arm 18 before the guided flow travels $1/4$ of a revolution of the disc 10.

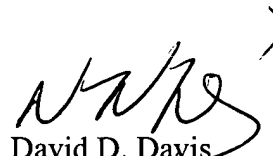
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Mon., Tues., Thurs. and Fri. between 7:30-6:00. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900. Any other

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inquiry should be directed to the customer service center whose telephone number is (703) 306-0377.



David D. Davis
Primary Examiner
Art Unit 2652

ddd

April 21, 2003